Copies to: C. Marpe, R. Wolvert, A. Chaddock, S. Christensen, F. Rogan, W. Warner

From: R. Wilson

Factory Mutual System

Arkwright-Boston Insurance

66 Bovet Road, Suite 201, San Mateo, California 94402 Tel: (415) 572-8833

Harborton
~~BEAVER~~
COMB. CYCLE
FILE PAWSYS 15-8
C. R.
3/23
LED
JAT
DRM
To ~~SHDH~~
FILE

March 6, 1979

Mr. Randal Wilson
Risk Manager
Portland General Electric
121 S. W. Salmon Street
Portland, Oregon, 97204

Re: Portland General Electric
"Harborton Generating Station"
Portland, Oregon
Index No. 77570.74
Account No. 2-58765

Dear Mr. Wilson:

Your attached copies cover the recent inspection by Dick Swanson to the subject idle plant.

The only recommendation of immediate concern is 78-10-1 which is directed towards improving the integrity of fire protection water supplies.

Would you please follow through with local management to have the prescribed safety measures implemented.

The remaining recommendations for physical protection are somewhat irrelevant at this time due to the idle status of this plant. However, in case equipment is reactivated, we would strongly urge that all recommended protection be provided.

Very truly yours,

M. P. Christensen
Regional Engineering Manager

MPC:yt

cc: Herbert Ballin Jr.
C. S. Harbert

Arkwright-Boston Insurance
Waltham, Massachusetts 02154

LOSS PREVENTION REPORT

FIRE AND ASSOCIATED PERILS

FOR PORTLAND GENERAL ELECTRIC
"HARBORTON GENERATING STATION"
Hwy. 26 (1 Mi. N. Of Linnton)
Portland, Oregon 97222

INDEX 77570.74

BY R. A. Swanson

ACCOUNT 2-58765

CONFERENCE WITH Mr. R. Kohout, Safety Supv.

ON Feb. 6,1979

HOUSEKEEPING	is	Satisfactory	SPRINKLERS	No	MORE NEEDED	Yes	
MAINTENANCE & REPAIR	is	Satisfactory	WATER SUPPLY	is	ADEQUATE	64	lbs. pressure
SUPERVISION FIRE EQUIPMENT	is nrly	Satisfactory	ALL VALVES	were	FOUND OPEN		
P.E.O. & WATCHMEN	is	Satisfactory					

The purpose of this report is to assist you in minimizing loss from fire and associated perils to the extent feasible. Your consideration of the recommendations below is invited. If you have alternate solutions or if your judgment is different, please write us.

SUMMARY

This gas turbine electric utility generating station is designed for remote operation. Maintenance is good. Several improvements in fire protection are needed as recommended below. The plant is idle.

PROPERTY CONSERVATION RECOMMENDATIONS TO CORRECT:

DEFICIENCIES RELATING TO THE HUMAN ELEMENT

78-10-1 All valves controlling water supplies should be locked in the fully open position, and a monthly recorded inspection of these valves should be made. Nonbreakable shackle type locks should be used.

DEFICIENCIES RELATING TO PHYSICAL PROTECTION

78-10-2 a.A properly designed automatic sprinkler or carbon dioxide system should be provided for protection of the turbine compartments and the generator compartment for each unit.

b.Properly designed automatic carbon dioxide protection should be provided for the generator windings for each unit. (over)

PRINTED IN USA

This copy is forwarded by
M. P. CHRISTENSEN, PROC. ENGR. MGR.
ARKWRIGHT-BOSTON INSURANCE
60 Spear Road, Suite 201
San Mateo, California 94402

Prepared by Factory Mutual Engineering Association

c.As a partial alternate to (a.) above, the existing Halon 1301 protection for the turbine compartment is acceptable only if tests show that the system is capable of maintaining the 5% Halon concentration for 40 minutes until all metal surfaces likely to reignite oil are cooled to below the auto-ignition temperature of the oil (400°F.-500°F.). A reserve supply of Halon 1301 should be provided for the same duration.

78-10-3 If fuel oil is to be kept in the two 100,000 bbl. oil storage tank, a dike wall should be provided between the two tanks.

78-10-4 The turbine combustor fuel system for each unit should be further protected by provision of the following:

a.Installation of a Factory Mutual approved combustion safeguards (flame supervision) arranged to shut off the fuel supply for both gas and oil upon flame failure. This is intended to supplement the existing temperature sensors installed in the turbine which presently perform this function.

b.Provision of Factory Mutual approved oil and gas safety shutoff valves interlocked with the combustion safeguard recommended in item (a.). Existing safety shutoff valves in turbines are not Factory Mutual approved.

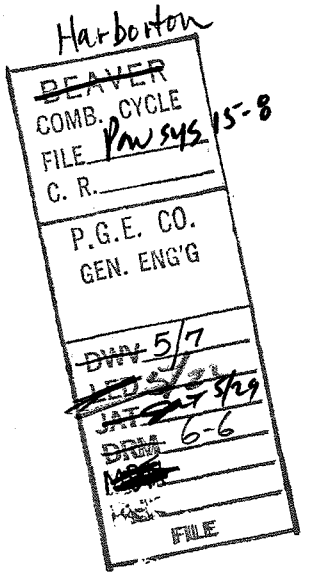
GENERAL REMARKS

The plant is currently idle and there is no indication when it might be operated. Guards make hourly recorded rounds throughout this site three shifts, seven days per week.

Each of the oil tanks is about half full. Use of one of the tanks is leased to others. The tanks are being used as an oil storage facility as it is tied into several different oil pipelines.

Checks on the fire system at present are unrecorded. Fire system post indicator valves are locked as are the hydrant hose houses,; however, breakable shackle type locks are used.

MDH



MEMORANDUM

TO: R. L. Chadwick

FROM: Randal F. Wilson

DATE: April 17, 1979

SUBJECT: INDUSTRIAL RISK INSURERS - LOST PREVENTION SURVEY, T. F. BARRY, FEBRUARY 6, 1979

Attached are copies of the IRI report covering their expection of the fuel storage facility at Harborton Generating Station. The included recommendations appear to be standard for this class of risk, and obviously disregard the economic considerations of the inoperative nature of this facility.

I don't feel a response should be necessary, since we had expressed a position of noncompliance at the time this location was under-written.

Please let us know if you wish to discuss this matter any further.

Thank you.

RFW/lpfc5A1

Enclosure
c: C. Marpe
R. Kohout
F. Rogan

Industrial Risk Insurers

LOSS PREVENTION SURVEY

PACIFIC REGIONAL OFFICE
One Embarcadero Center San Francisco, Calif. 94111

CONFIDENTIAL
THIS REPORT SHOULD BE MADE AVAILABLE ONLY TO AUTHORIZED PERSONS.

PORTLAND GENERAL ELECTRIC
HARBORTON SUBSTATION
12500 N. W. Marina Way
PORTLAND, MULTNOMA COUNTY,
OREGON 97222

BY T. F. Barry **DATE:** Feb. 6, 1979
LOC. ID P-9951/P-10787 **HRS:** 2 3/4
CONFERRED WITH Mr. R. Kohout, P.G.E. Safety Co-ordinator

RECOMMENDATION **NEW*:** 79-1 through 79-3 (79-3)
UPDATE **Completed:**

RECOMMENDATIONS

*79-1. To limit the possibility of a severe flammable liquids fire involving the fuel storage tanks, a fixed pipe foam proportioning system should be provided for each floating roof tank in the following manner: Rate of application and supply of foam liquid should be calculated using the area of the annular ring between the circular dam and the tank shell. The minimum solution rate should be .16 GPM per sq. ft.. The supply of foam liquids should be adequate to operate the system for 20 minutes. The maximum spacing between application nozzles should be 80 feet. The foam should be a low expansion fluid type of foam with good drainage capabilities. The system should be designed to operate automatically and designed in accordance with N.F.P.A. pamphlet No. 11 - standard for foam extinguishing systems.

*79-2. To reduce the possibility of involving both tanks in a single catastrophe, a separator dike should be extended between the two tanks. This dike should be the same height as the present earth dike.

*79-3. In order to utilize hose streams from the hydrants located outside the fenced off area, east of the tanks, gates should be installed to provide access.

COMMENTS Original Report

This power generating substation is presently not in operation. Because of environmental restrictions, the status of this facility is un-determined. The one storage tank is currently being leased to a local concern for fuel oil storage. The second tank is empty, and will probably be leased out in the near future.

Pre-emergency planning is considered adequate for this location.

JWD:drp

AS	PROT	RM	PEP	WS	SUPR	FD	HPS	COMP		LPF	LPF	LPF	LPF	TC	MD	FREQ	IFO	UC	EC	SH
10	4	5	5	2F	6G	6G	00	0						2	0	18T	92	92	92	0
19-20	21-22	23-24	25-26	27-29	30-32	33-35	36-38	39-40		41-44	45-48	49-52	53-56		57-58	66	59-60	61-62	63-64	65

RISK PORTLAND GENERAL ELECTRIC LOCATION ID P-9951/P-10787

WATER SUPPLIES	TEST RESULTS					
	G.P.M.	Flow Location	Static	Resid.	Pres. Location	Tested:
Private 8" looped mains around Tank Farm being fed from a 12" C.W.M. at hwy #30 (800' east)	1432	Hydt. #2 on 8" loop	66	22	Hydt.#1 on 8" loop	2/6/79 TFB

Fire Dept. Conn. None

FIRE PUMP CAPACITY G.P.M.	HEAD RATING	DRIVE	AUTO. MAN.	SUCTION SOURCE	Shutoff Pres.	G.P.M.	Disc. Pres.	R.P.M.	Suct. Pres. Slip	Cond.	Tested:
None											

Highest Spr. None ft.